ORDER NO. KM49104592C1
F1

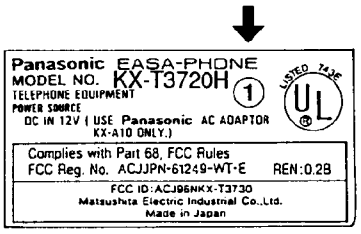
Service Manual

and Technical Guide

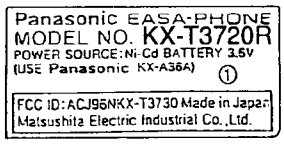
EASA-PHONE®
CORDLESSPHONE

Telephone Equipment

KX-T3720-1



(Model KX-T3720H-1)



(Model KX-T3720R-1)

1. There are 2 types of model KX-T3720, such as KX-T3720, and KX-T3720-1.
2. Model KX-T3720-1 have a mark ① on the name plate as shown in figure left.
3. Please use this manual for model KX-T3720-1.

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REPLACEMENT PARTS LIST (KX-T3720R-1)/СПИСОК ЗАПАСНЫХ ЧАСТЕЙ (KX-T3720R-1)

Panasonic

■ SPECIFICATIONS

General

Modulation:	FM, 5 kHz Deviation
Frequency Stability:	±2.5 kHz
Dial Type:	Tone (DTMF)/Pulse
Redial:	Last dialed number each time the Redial button is pressed
Pause:	3.5 seconds per pause

	Base unit (KX-T3720H-1)	Portable unit (KX-T3720R-1)
Power Source:	AC adaptor KX-A10 (DC 12 V)	Built-in rechargeable Ni-Cd battery (KX-A36A)
(Receiver Section)		
Receiving frequency:	10 channel within 49.6 to 49.9 MHz	10 channel within 46.6 to 46.9 MHz
Adjacent Channel Rejection:	40 dB	40 dB
Sensitivity:	1 dBμ V for 20 dB S/N	2 dBμ V for 20 dB S/N
(Transmitter Section)		
Transmitting Frequency:	10 channel within 46.6 to 46.9 MHz	10 channel within 49.6 to 49.9 MHz
Jacks:	DC IN, Telephone Line	
Antenna:	Telescopic	Retractable Rubber Flexible
Speaker:	2″ (5 cm) PM Dynamic	$1^{3}/_{16}$″ (3 cm) ceramic type
Microphone:	Condenser Microphone	Condenser Microphone
Dimensions (HxWxD):	$2^{9}/_{32}$″x$5^{1}/_{4}$″x$8^{21}/_{32}$″ (53x133x220 mm)	$11^{13}/_{32}$″x$2^{13}/_{32}$″x$2^{5}/_{32}$″ (290x61x55 mm)
Weight:	0.84 lbs. (380 g)	0.52 lbs. (235 g) with battery

Design and specifications are subject to change without notice.

DISASSEMBLY INSTRUCTIONS

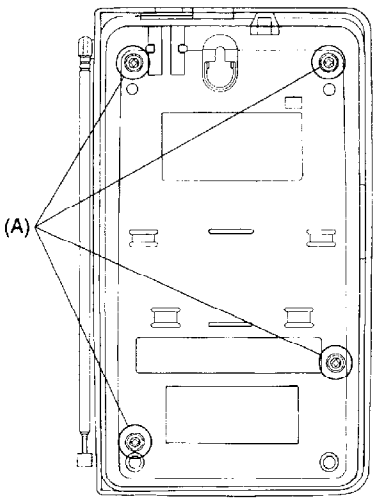


Fig. 3

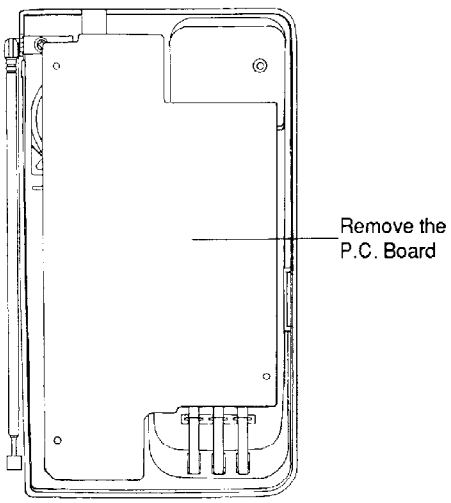


Fig. 4

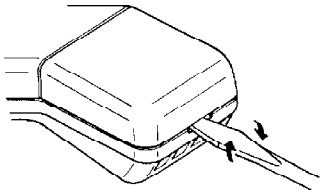


Fig. 5

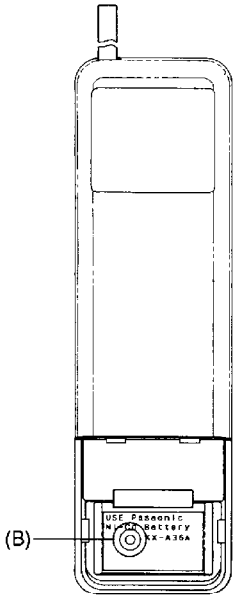


Fig. 6

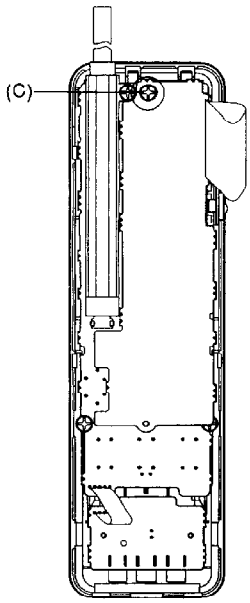


Fig. 7

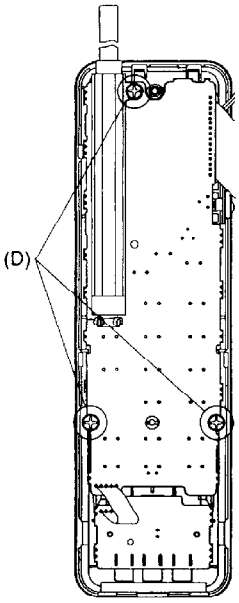


Fig. 8

Ref. No.	Procedure	Shown In Fig.—	To remove—.	Remove—.
1	1	3	Lower Cabinet	Screws (3×14) ..... (A)×4
2	1, 2	4	Printed Circuit Board	Remove the P.C. Board
3	3, 4	5	Rear Cabinet	*
4		6		Screw (2.6×10) ..... (B)×1
5	3–5	7	Printed Circuit Board	Screw (2.6×10) ..... (C)×1
6	3–6	8		Screws (2.6×10, 2.6×8) ..... (D)×3

*Open the cover by inserting a screwdriver in the slot and twist it to pry the battery cover off, see Fig. 5.

CPU DATA KX-T3720H-1 (Base Unit)

IC4 MN158413KPJ

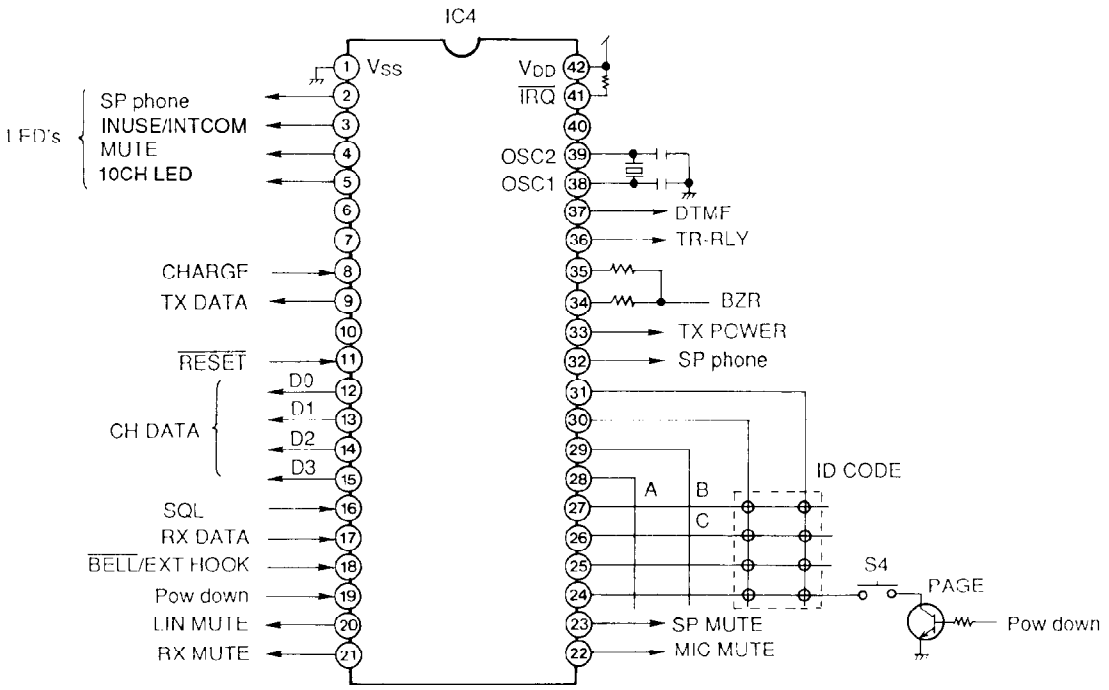


Fig. 9

Option:

		Diode Closed	Diode Open
A	% Break	67%	61%
B	Electric Field Detect	30 sec	60 sec
C	Tone/Pulse	Pulse	Tone

Pin No.	Mark	Description	Logical 'H'	Logical 'L'	Pin No.	Mark	Description	Logical 'H'	Logical 'L'
1	Vss	Vss=0 V		Normal	22	MIC MUTE	Microphone Mute	Mute	
2	SP PHONE	Speakerphone LED	Off	On	23		Speaker Mute	Mute	
3	IN USE	In Use/intercom LED	Off	On	24		Key Input		Key In
4	MUTE	Mute LED	Off	On	25				Key In
5	CH	Charge LED	Off	On	26				Key In
6		Not Used			27				Key In
7		Not Used			28		Strobe Output	Normal	Strobe Out
8	Charge	Charge Detection	Charge	Non charge	29			Normal	Strobe Out
9	TX Data	TX Data	1	0	30			Normal	Strobe Out
10	TONE	Not Used			31			Normal	Strobe Out
11	RESET	Reset		Reset	32	SP-PHONE	Speakerphone	Off	On
12	D0	PLL Channel Data	1	0	33	TX POW	TX Power	On	Off
13	D1		1	0	34		Buzzer Output	—	—
14	D2		1	0	35	BZR		—	—
15	D3		1	0	36	TR-RLY	Relay	Make	Break
16	SQL	Electric Field	High	Low	37	DTMF	DTMF Output	—	—
17	RX DATA	RX Data	1	0	38	OSC1			
18	BELL/HOOK	Bell at standby/Ext Hook at Hold	Bell off/ off Hook	Bell In/—	39	OSC2			
19	POW DOWN	Power Down	—	Power Down	40		Not Used		
20	LIN MUTE	Line Mute	Mute	—	41	IRQ	Not Used		
21	RX MUTE	RX Mute	Mute		42	VDD	VDD=4.5~5.5 V		

CPU DATA KX-T3720R-1 (Portable Unit)

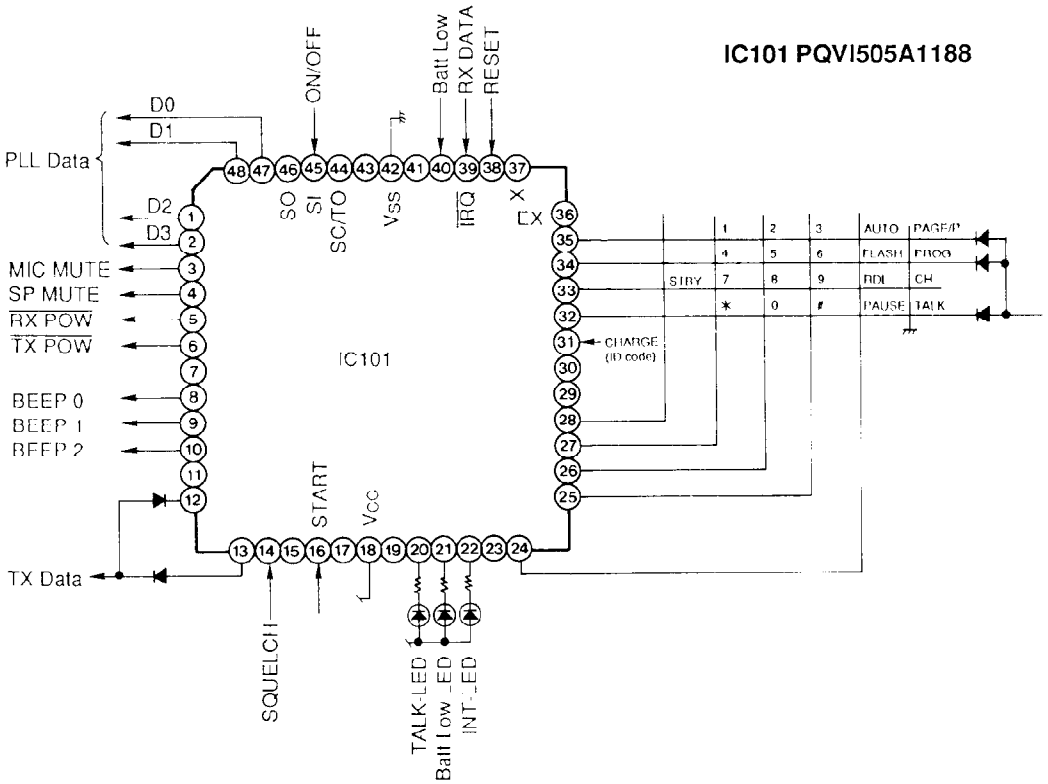


Fig. 10

Pin No.	Mark	Description	Logical 'H'	Logical 'L'	Pin No.	Mark	Description	Logical 'H'	Logical 'L'
1	D2	Channel Data	1	0	25				Active
2	D3		1	0	26				Active
3	MIC MUTE	Microphone Mute	Mute	—	27		Strobe Out		Active
4	SP MUTE	Speaker Mute	Mute	—	28				Active
5	$\overline{\text{RX POW}}$	RX Power	Off	On	29				
6	$\overline{\text{TX POW}}$	TX Power	Off	On	30		Not Used		
7		Not Used			31	CHARGE	Charge	Non charge	Charge
8	BEEP 0	Beep 0	Normal	Active	32				Key In
9	BEEP 1	Beep 1	Normal	Active	33		Key Input		Key In
10	BEEP 2	Beep 2	Normal	Active	34				Key In
11		Not Used			35				Key In
12	TX	TX Data	1	0 (Normal)	36	OSC	Clock In		
13	DATA	TX Data	1 (Normal)	0	37		Clock Out		
14	SQL	Electric Field	Low	High	38	RESET	Reset		Active
15					39	RX DATA	RX Data	1	0
16	START	Start	Activation		40	Batt Low	Battery Low	High	Low
17		Not Used			41		Not Used		
18	Vcc	Vcc			42	Vss	Vss=0 V		
19		Not Used			43		Not Used		
20	TALK	Talk LED	Off	On	44		Not Used		
21	Batt Low	Multi LED	Off	On	45	ON/OFF	Power On/Off	On	Off
22	INT	Intercom LED	Off	On	46		Not Used		
23					47		Channel Data	1	0
24		Strobe Out		Active	48			1	0

ADJUSTMENTS (KX-T3720H-1)

■ TRANSMITTER ADJUSTMENT

(A) Phase Detector Voltage Adjustment
(B) Frequency Adjustment
(C) Power Adjustment

Required Equipments
- Frequency Counter
- Digital voltmeter
- RF VTVM

Connection of Equipments
This diagram shows the connection of equipments required for (A) through (C).
Unnecessary equipment (s) can be eliminated if not required.

Flow Solder Side View

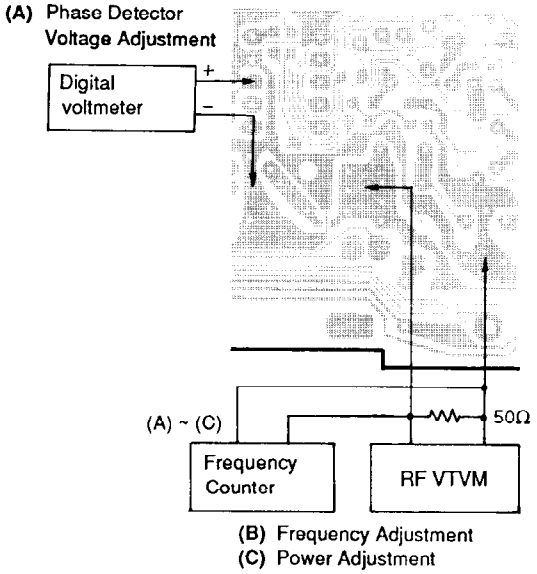


Fig. 11

	Required Equipment	Conditions	Procedure
(A)	Frequency Counter Digital Voltmeter	(1) Set the Code Selector to read "A". (2) Connect the AC Adaptor (KX-A10) plug into DC IN Jack and the other end into a power outlet (AC 120 V, 60 Hz). (3) Set the Power/Ringer Switch to "ON", and press Talk Button of the KX-T3720R-1. (4) Set the unit to CH10 frequency (Press the Channel Button of KX-T3720R-1 so that reading of the frequency counter is 46.970 MHz).	(1) Adjust **T9** (clockwise) so that the reading of the Digital Voltmeter is 3.4 V ±0.1 V.
(B)	Frequency Counter RF VTVM	Same as (A)	(1) Adjust **T7** and **T8** for maximum output on RF VTVM. (2) Adjust **VC1** so that the reading of the frequency counter is 46.970 MHz ±100 Hz (CH10).
(C)	Frequency Counter RF VTVM	Same as (A)	(1) Adjust **T8** (clockwise) so that the both ends of resistor 50Ω is 65 mV ±10 mV by RF VTVM.

■ RECEIVER ADJUSTMENT

(A) Phase Detector Voltage Adjustment
(B) RF Adjustment

Required Equipments
- ●Frequency Counter
- ●Digital Voltmeter
- ●S.S.G (Signal Generator)
- ●Loop Simulator
- ●AF VTVM

Connection of Equipments
This diagram shows the connection of equipments required for (A) through (B).
Unnecessary equipment (s) can be eliminated if not required.

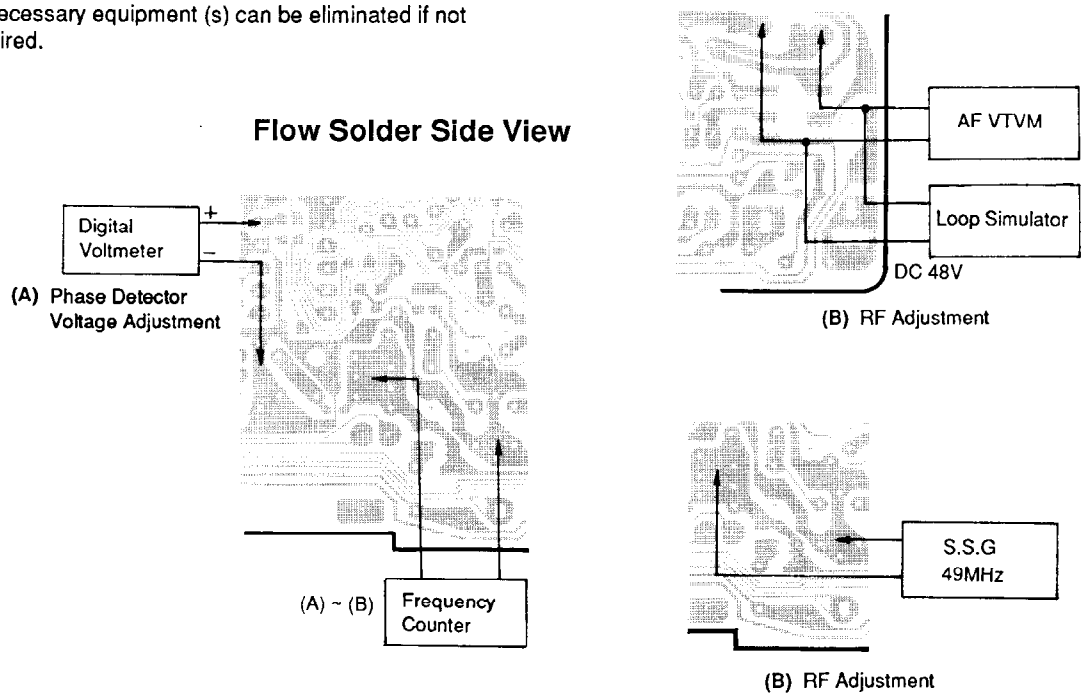
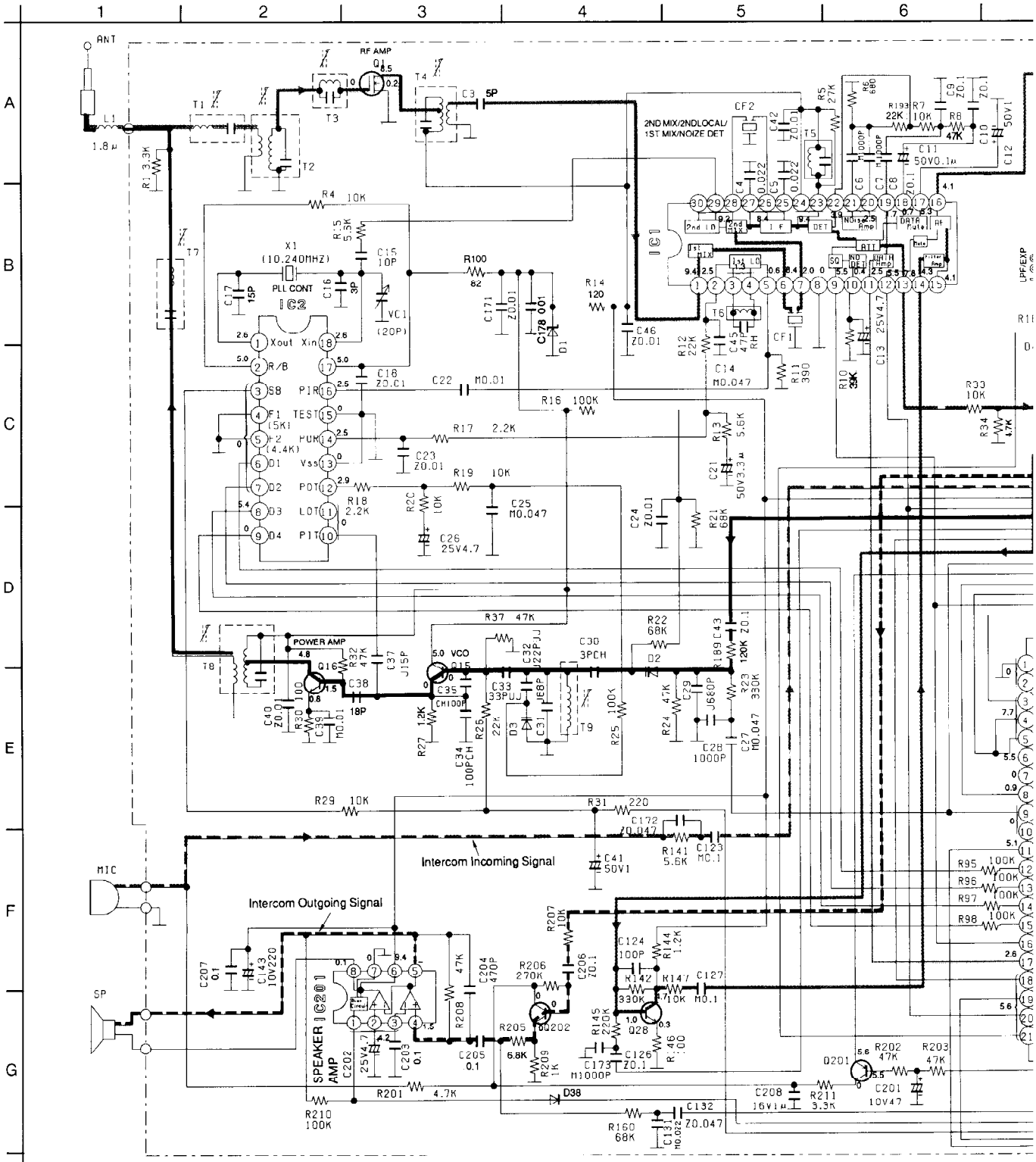


Fig. 12

	Required Equipment	Conditions	Procedure
(A)	Frequency Counter Digital Voltmeter	(1) Set the Code Selector to read "A". (2) Connect the AC Adaptor (KX-A10) plug into DC IN Jack and the other end into a power outlet (AC 120 V, 60 Hz). (3) Set the Power/Ringer Switch to "ON", and press Talk Button of the KX-T3720R-1. (4) Set the unit to CH10 frequency (Press the Channel Button of KX-T3720R-1 so that reading of the frequency counter is 49.970 MHz).	(1) Adjust **T6** (clockwise) so that the reading of the Digital Voltmeter is 3.4 V ±0.1 V.
(B)	Frequency Counter S.S.G. Loop Simulator AF VTVM	(1) Same as (A) (2) Apply a 130 dBμ output from S.S.G. (3) Set the Power/Ringer switch to "OFF" of the KX-T3720R-1.	(1) Apply a 60 dBμ output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz). (2) Apply a DC 48 V from Tel Jack (CN1) by Loop simulator. (3) Adjust **T5** from maximum output between T-R (with AF VTVM). (4) Apply a 30 dBμ output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz), and adjust **T1**, **T2**, **T3**, and **T4** (in that order) for maximum output between T–R (by AF VTVM).

SCHEMATIC DIAGRAM (K



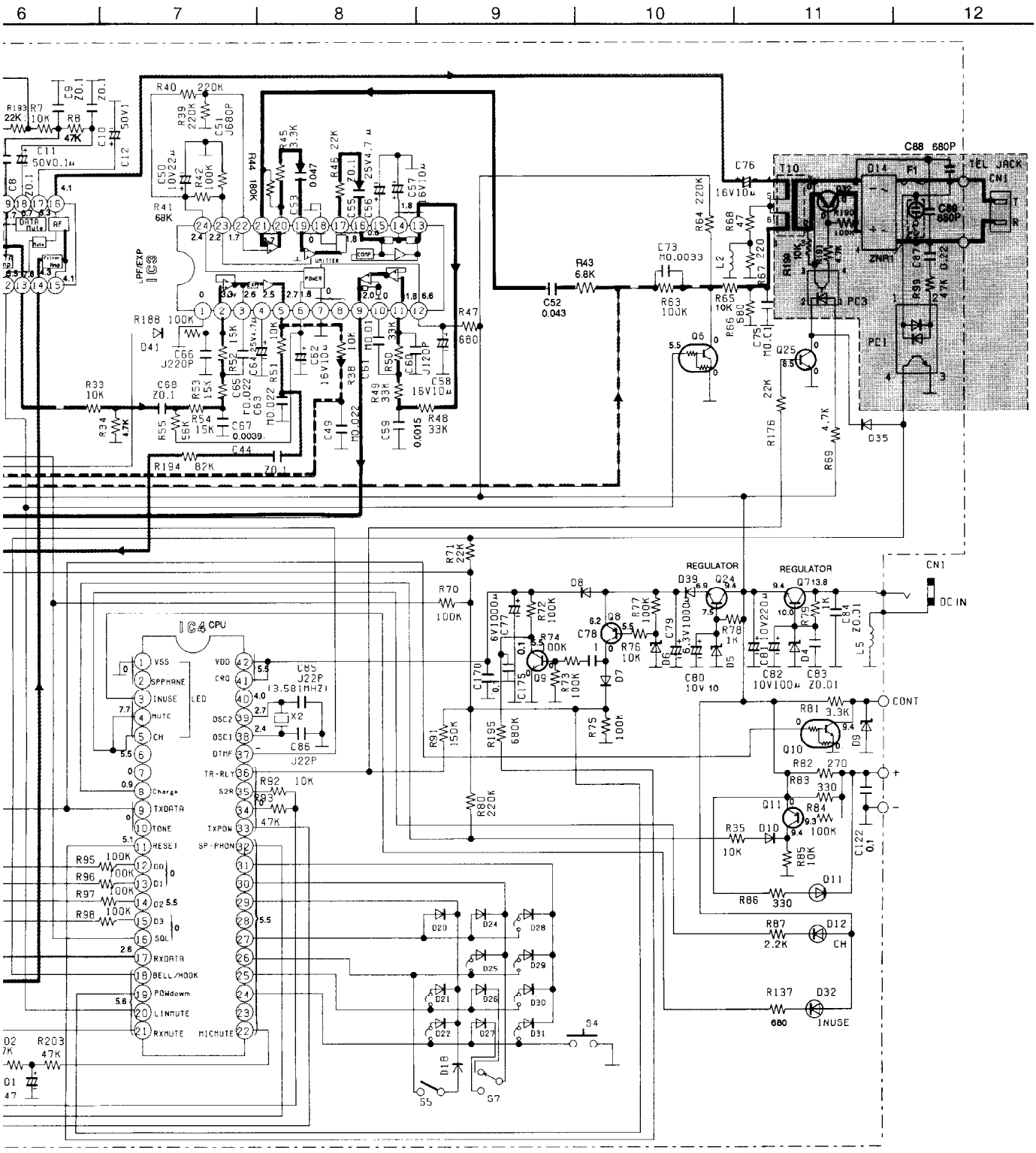
Notes:

1. S4: Page/Intercom switch in "OFF" position.
2. S5: Dialing mode selector in "TONE" position.
3. S7: Code Selector switch in "A" position.
4. DC voltage measurements are taken with an electronic voltmeter from the negative voltage line. STANDBY position

Important Safety Notice

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

AGRAM (KX-T3720H-1)



c diagram incor-
rotection from fire
ly manufacturer's
omponents in the

This schematic diagram may be modified at any time with development of new technology.

TX Signal
RX Signal
Data Signal

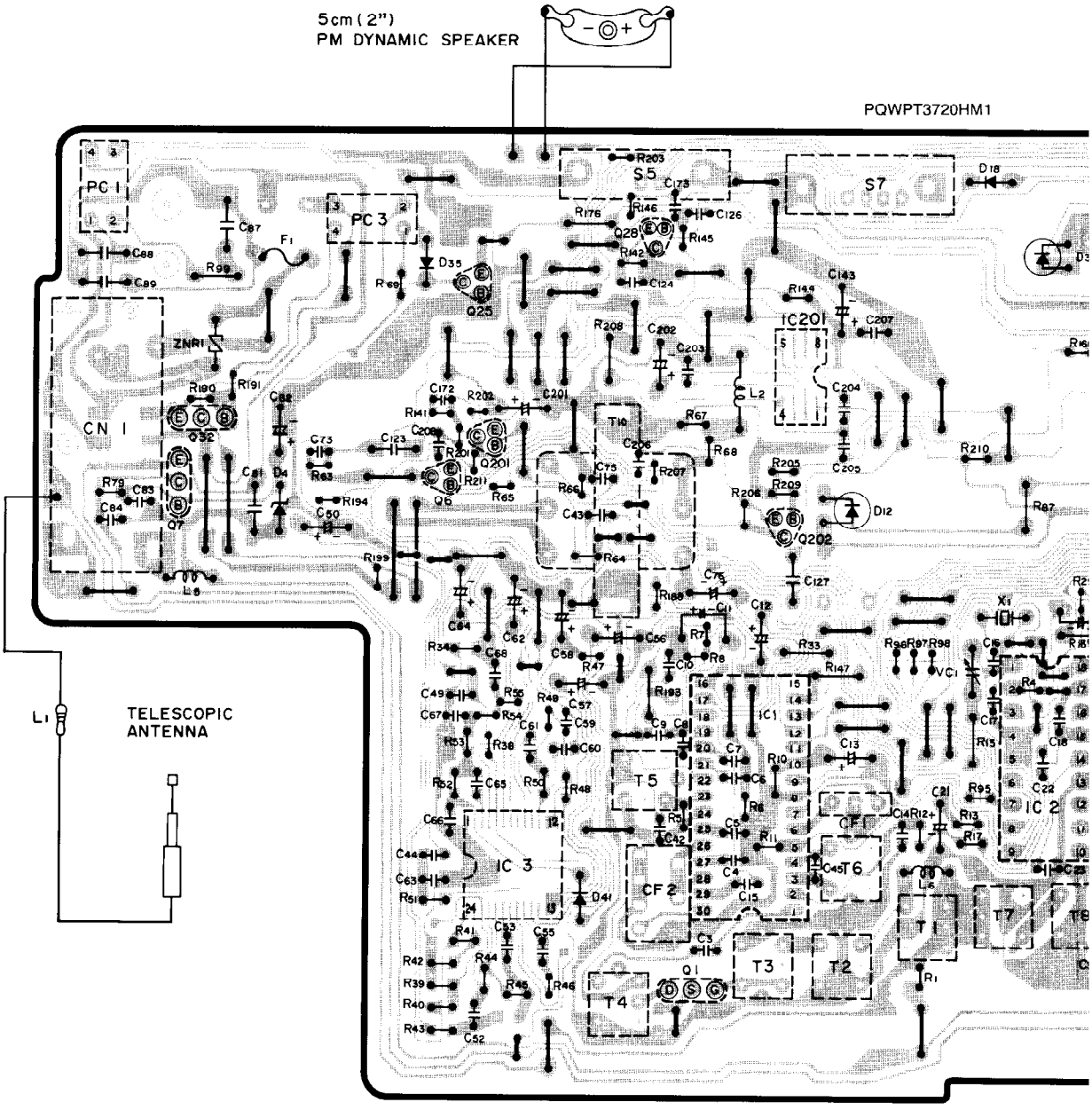
To prevent the jamming

(COMPO

1. The model KX-T3720-1 has the 64 ID codes tc prevent the jamming as shown right table.
2. If you want change the ID code, short or open diodes D24, D25, D28–D31.
3. After changing the ID code of the KX-T3720H-1, place the KX-T3720R-1 in the cradle of the KX-T3720H-1, then the KX-T3720R-1's ID code is set to same one automatically.

O: Short the diodes
X: Open the diodes

ID Code	D31	D30	D29	D28	D25	D24	ID Code	D31	D30	D29	D28	D25
1	O	O	O	O	O	O	17	O	O	O	O	O
2	O	O	O	O	O	X	18	O	O	O	O	O
3	O	O	O	O	X	O	19	O	O	O	O	X
4	O	O	O	O	X	X	20	O	O	O	O	X
5	O	O	O	X	O	O	21	O	O	O	X	O
6	O	O	O	X	O	X	22	O	O	O	X	O
7	O	O	O	X	X	O	23	O	O	O	X	X
8	O	O	O	X	X	X	24	O	O	O	X	X
9	O	O	X	O	O	O	25	O	O	X	O	O
10	O	O	X	O	O	X	26	O	O	X	O	O
11	O	O	X	O	X	O	27	O	O	X	O	X
12	O	O	X	O	X	X	28	O	O	X	O	X
13	O	O	X	X	O	O	29	O	O	X	X	O
14	O	O	X	X	O	X	30	O	O	X	X	O
15	O	O	X	X	X	O	31	O	O	X	X	X
16	O	O	X	X	X	X	32	O	O	X	X	X

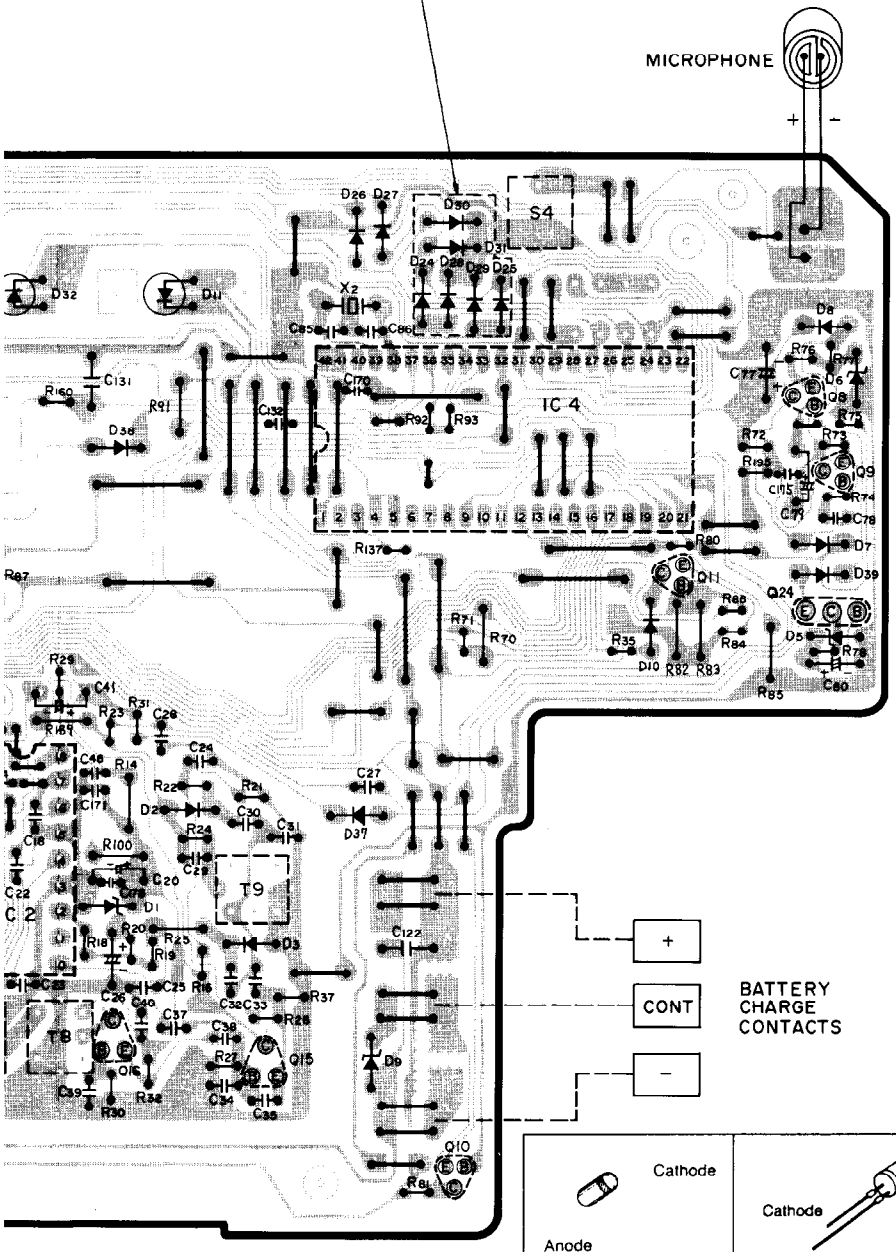


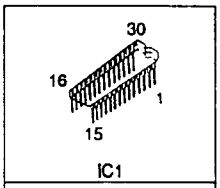
CONNECTION DIAGRAM (KX-T3720H-1)

7 | 8 | 9 | 10 | 11 | 12

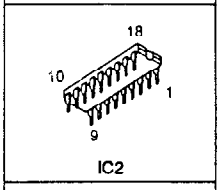
MPONENT VIEW)

D25	D24	ID Code	D31	D30	D29	D28	D25	D24	ID Code	D31	D30	D29	D28	D25	D24
O	O	33	O	X	O	O	O	O	49	O	X	O	O	O	O
O	X	34	O	X	O	O	O	X	50	O	X	O	O	O	X
X	O	35	O	X	O	O	X	O	51	O	X	O	O	X	O
X	X	36	O	X	O	O	X	X	52	O	X	O	O	X	X
O	O	37	O	X	O	X	O	O	53	O	X	O	X	O	O
O	X	38	O	X	O	X	O	X	54	O	X	O	X	O	X
X	O	39	O	X	O	X	X	O	55	O	X	O	X	X	O
X	X	40	O	X	O	X	X	X	56	O	X	O	X	X	X
O	O	41	O	X	X	O	O	O	57	O	X	X	O	O	O
O	X	42	O	X	X	O	O	X	58	O	X	X	O	O	X
X	O	43	O	X	X	O	X	O	59	O	X	X	O	X	O
X	X	44	O	X	X	O	X	X	60	O	X	X	O	X	X
O	O	45	O	X	X	X	O	O	61	O	X	X	X	O	O
O	X	46	O	X	X	X	O	X	62	O	X	X	X	O	X
X	O	47	O	X	X	X	X	O	63	O	X	X	X	X	O
X	X	48	O	X	X	X	X	X	64	O	X	X	X	X	X

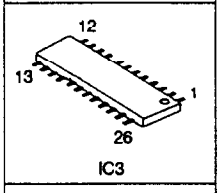




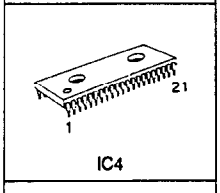
IC1



IC2



IC3



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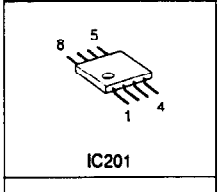
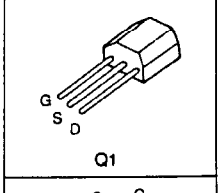
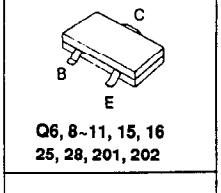


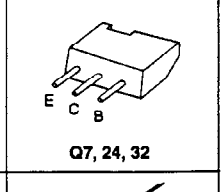
IC201



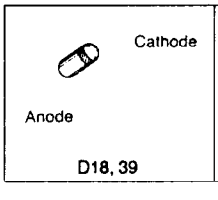
Q1



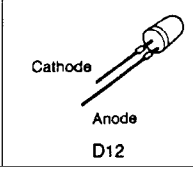
Q6, 8~11, 15, 16
25, 28, 201, 202



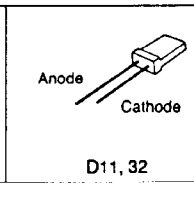
Q7, 24, 32



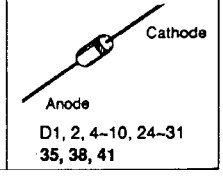
D18, 39



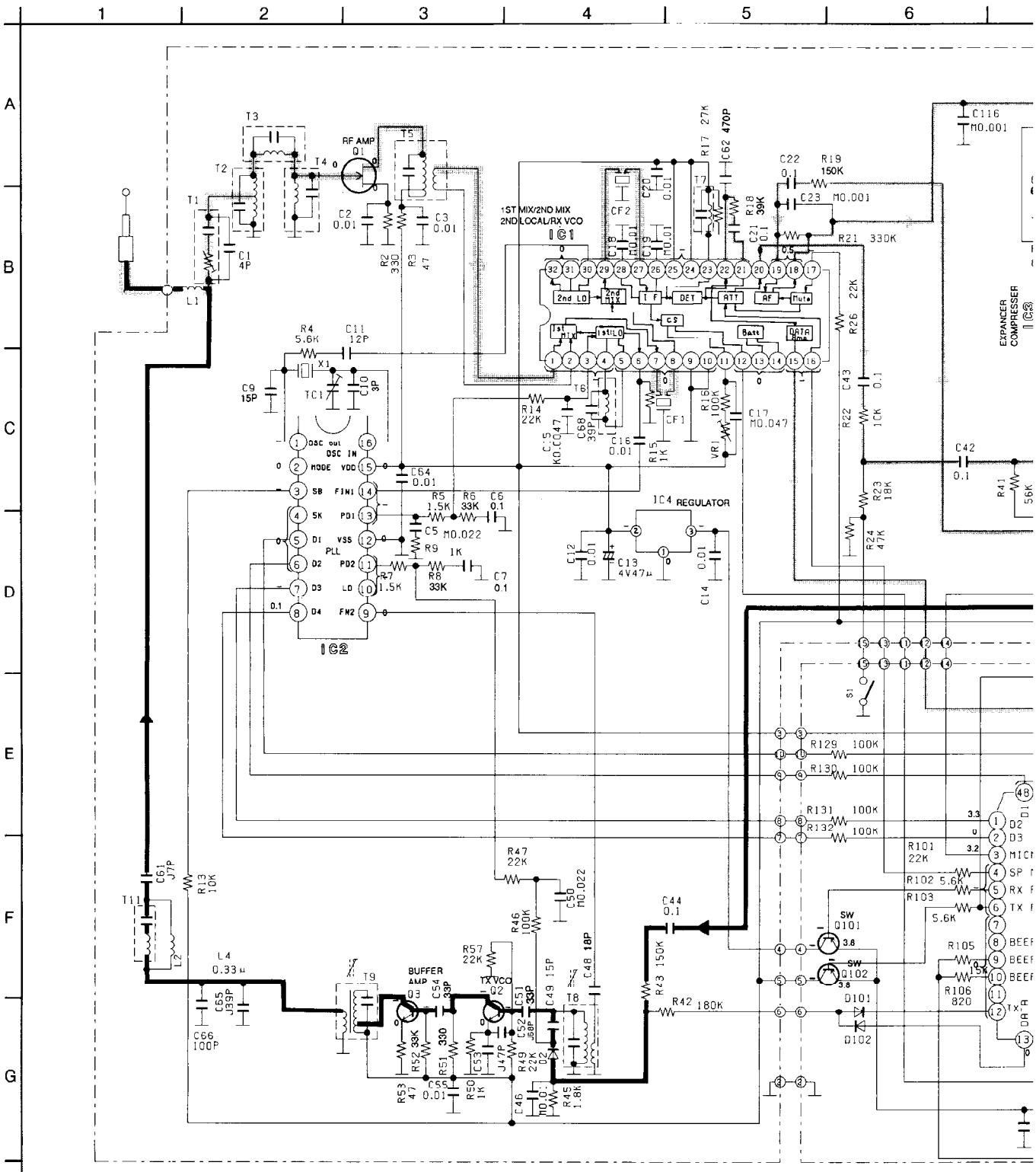
D12



D11, 32



D1, 2, 4~10, 24~31
35, 38, 41

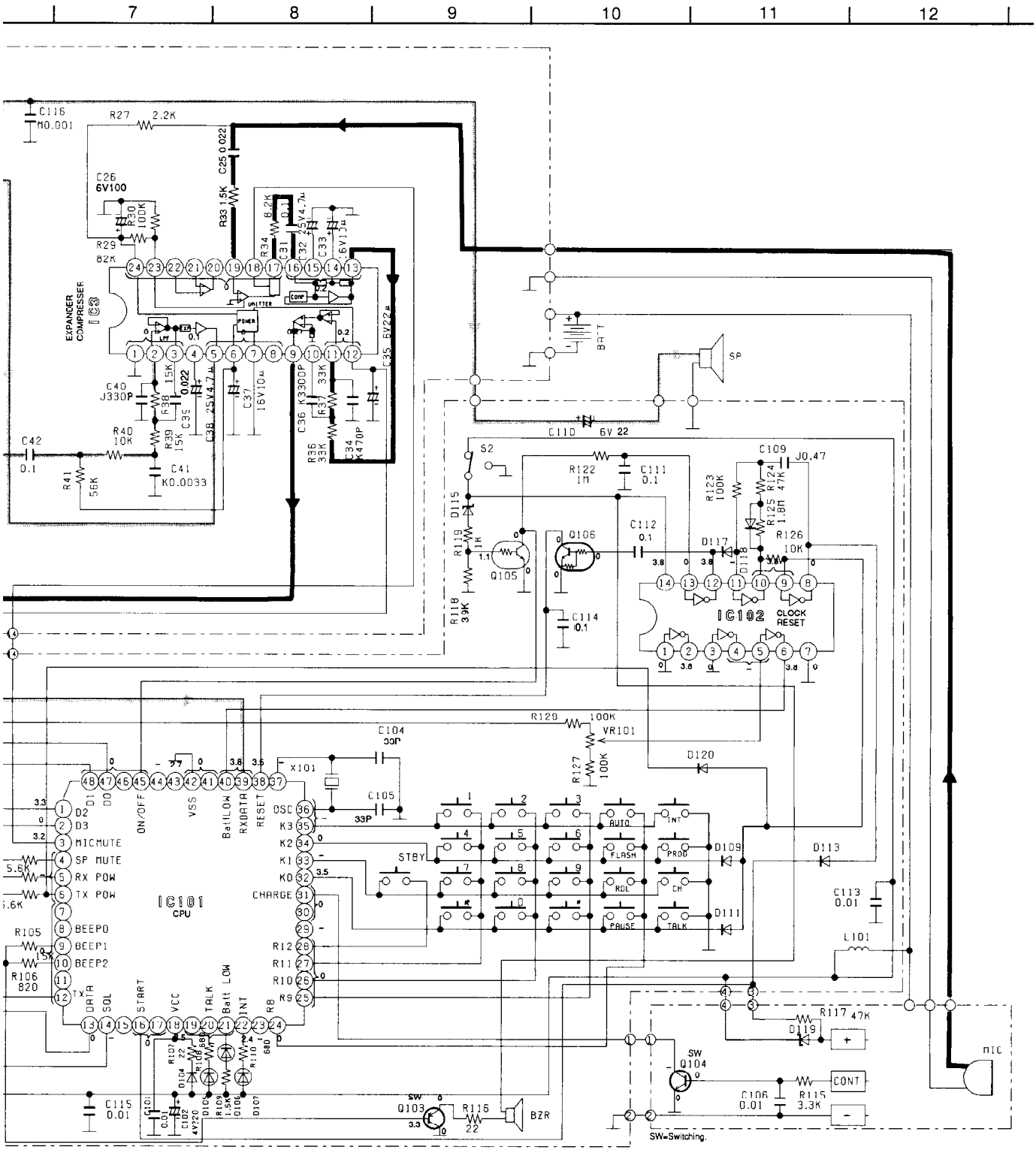


Notes:

1. S1: Volume Selector Switch in "HIGH" position.
2. S2: Power/Ringer switch in "OFF" position.
3. DC voltage measurements are taken with electronic voltmeter from negative voltage line.
   STANDBY position

TX Signal
RX Signal
Data Signal

)IAGRAM (KX-T3720R-1)



nic

This schematic diagram may be modified at any time with the development of new technology.

ADJUSTMENTS (KX-T3720R-1)

■ TRANSMITTER & RECEIVER ADJUSTMENT

(A) Battery Low Adjustment
(B) Transmit VCO voltage Adjustment
(C) Receiver VCO voltage Adjustment
(D) Transmit Frequency Adjustment
(E) Transmit Output Adjustment
(F) Receiver Sensitivity Adjustment
(G) Carrier Sensitivity Adjustment

Required Equipment

- DC Power Supply
- Digital voltmeter
- Frequency Counter
- RF VTVM
- S.S.G.
- AF VTVM
- Oscilloscope

Flow Solder Side View

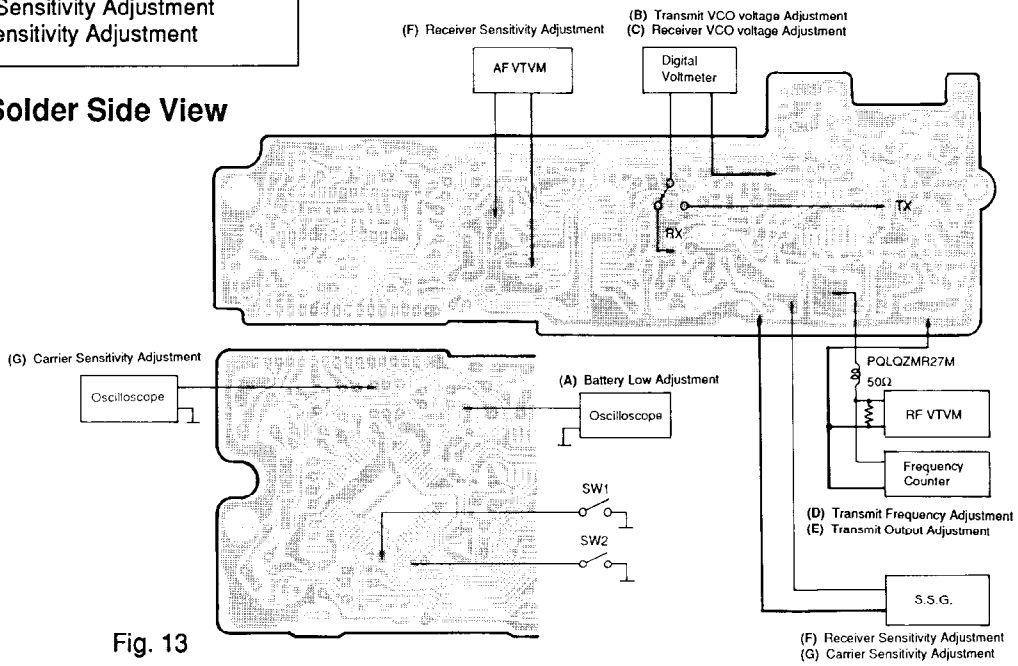


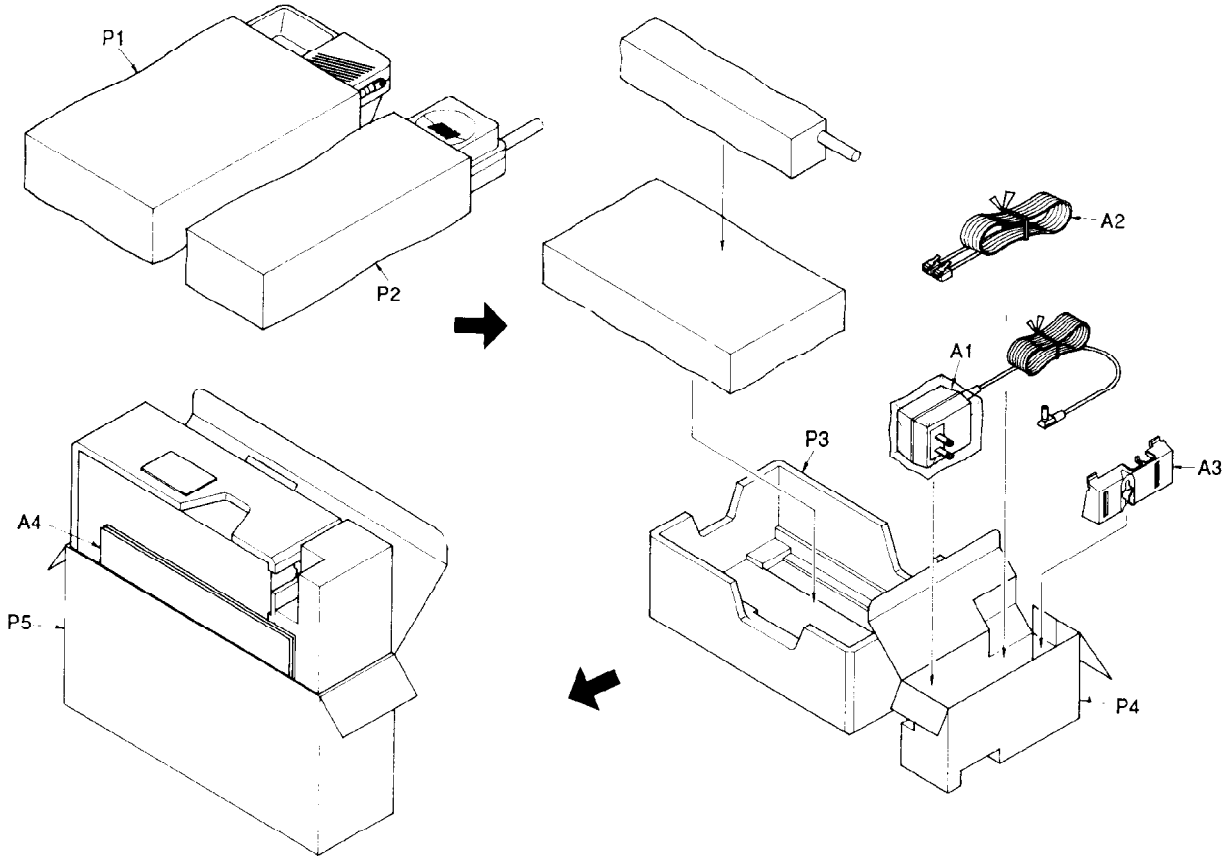
Fig. 13

	Required Equipment	Conditions	Procedure
(A)	DC Power Supply Oscilloscope	(1) Apply a DC 3.6 V to the connector CN1. (2) Set the Volume Selector to "NORMAL". (3) Set SW1 to ON (SW2 is OFF). (4) Set Power/Ringer Switch to "ON". (5) Press the TALK Button (unit enters CH10).	(1) Set the DC voltage level to DC 3.57 V, and adjust **VR101** so that Battery Low Indicator just illuminates at 3.57 V.
(B)	Digital Voltmeter	Same as (A)	(1) Adjust **T8** so that the reading of the Digital voltmeter is 2.1 V ± 0.1 V.
(C)	Digital Voltmeter	Same as (A)	(1) Adjust **T6** so that the reading of the Digital voltmeter is 2.1 V ±0.1 V.
(D)	Frequency Counter	Same as (A)	(1) Adjust **TC1** so that the reading of the frequency counter is 49.970 MHz ±100 Hz (10CH).
(E)	RF VTVM	Same as (A)	(1) Adjust **T9** and **T11** for maximum output on RF VTVM. (2) Adjust **T9** (counterclockwise) so that the reading of RF VTVM is 250 mV~400 mV.
(F)	S.S.G. AF VTVM	Same as (A)-(1), (2) (3) Set SW2 to ON (SW1 is OFF). (4) Set Power/Ringer switch to "ON". (5) Press the TALK Button (unit enters CH5).	(1) Apply a 60 dBμ output from S.S.G. (modulation frequency 1 kHz, dev, 3 kHz). (2) Adjust **T7** for maximum output at the speaker output (by AF VTVM). (3) Apply a 40 dBμ output from S.S.G. (unmodulated). (4) Adjust **T1, T2, T4** and **T5** (in that order) for maximum output by AF VTVM.
(G)	S.S.G. Oscilloscope	Same as (A)-(1), (2) and (F)-(3), (4)	(1) Apply a 9 dBμ output from S.S.G., and adjust **VR1** so that the oscilloscope is Low level.

FREQUENCY TABLE (MHz)

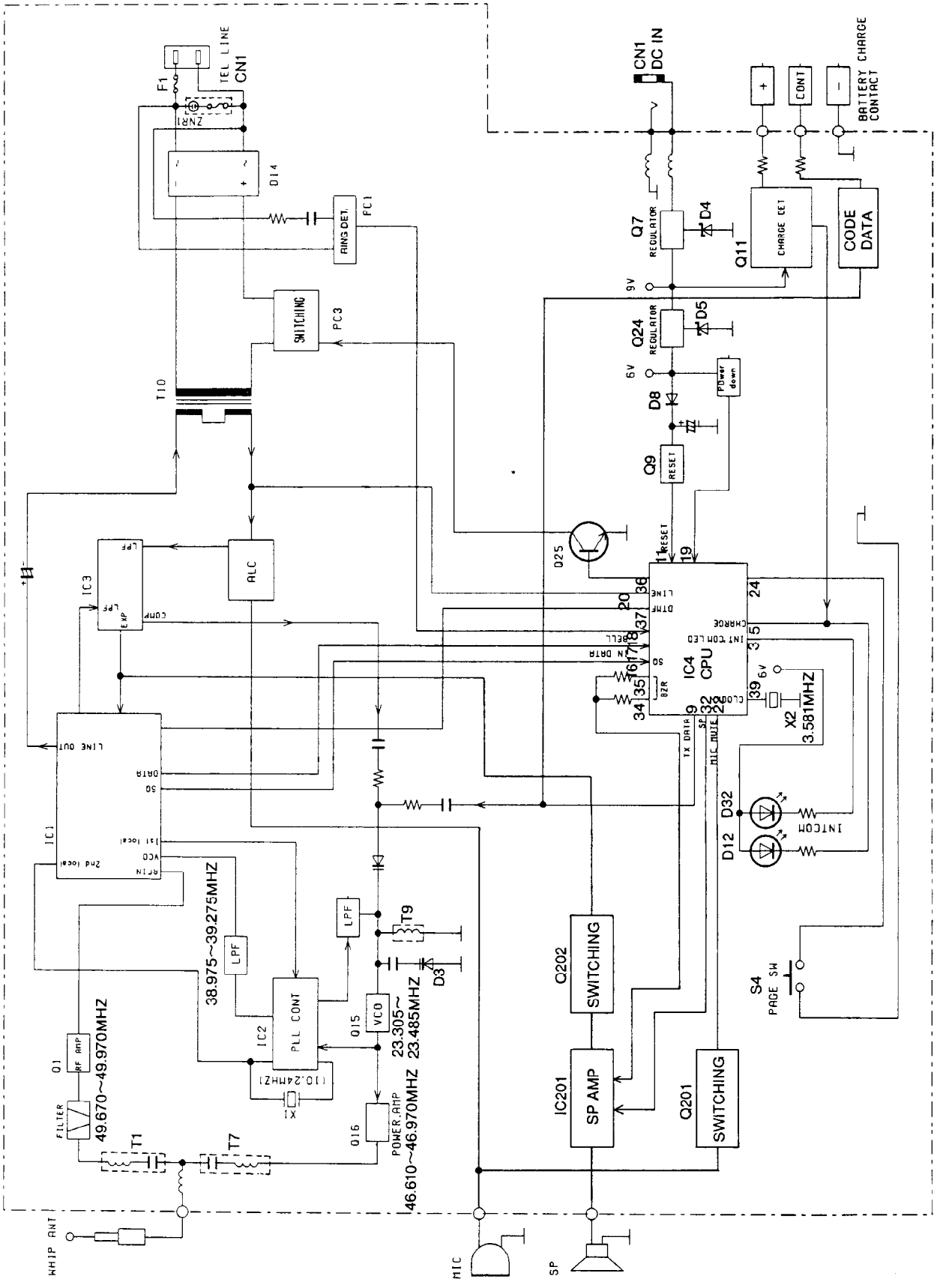
	KX-T3720H-1		KX-T3720R-1	
	Transmit Frequency	Receive Frequency	Transmit Frequency	Receive Frequency
CH1	46.610	49.670	49.670	46.610
CH2	46.630	49.845	49.845	46.630
CH3	46.670	49.860	49.860	46.670
CH4	46.710	49.770	49.770	46.710
CH5	46.730	49.875	49.875	46.730
CH6	46.770	49.830	49.830	46.770
CH7	46.830	49.890	49.890	46.830
CH8	46.870	49.930	49.930	46.870
CH9	46.930	49.990	49.990	46.930
CH10	46.970	49.970	49.970	46.910

ACCESSORIES AND PACKING MATERIALS



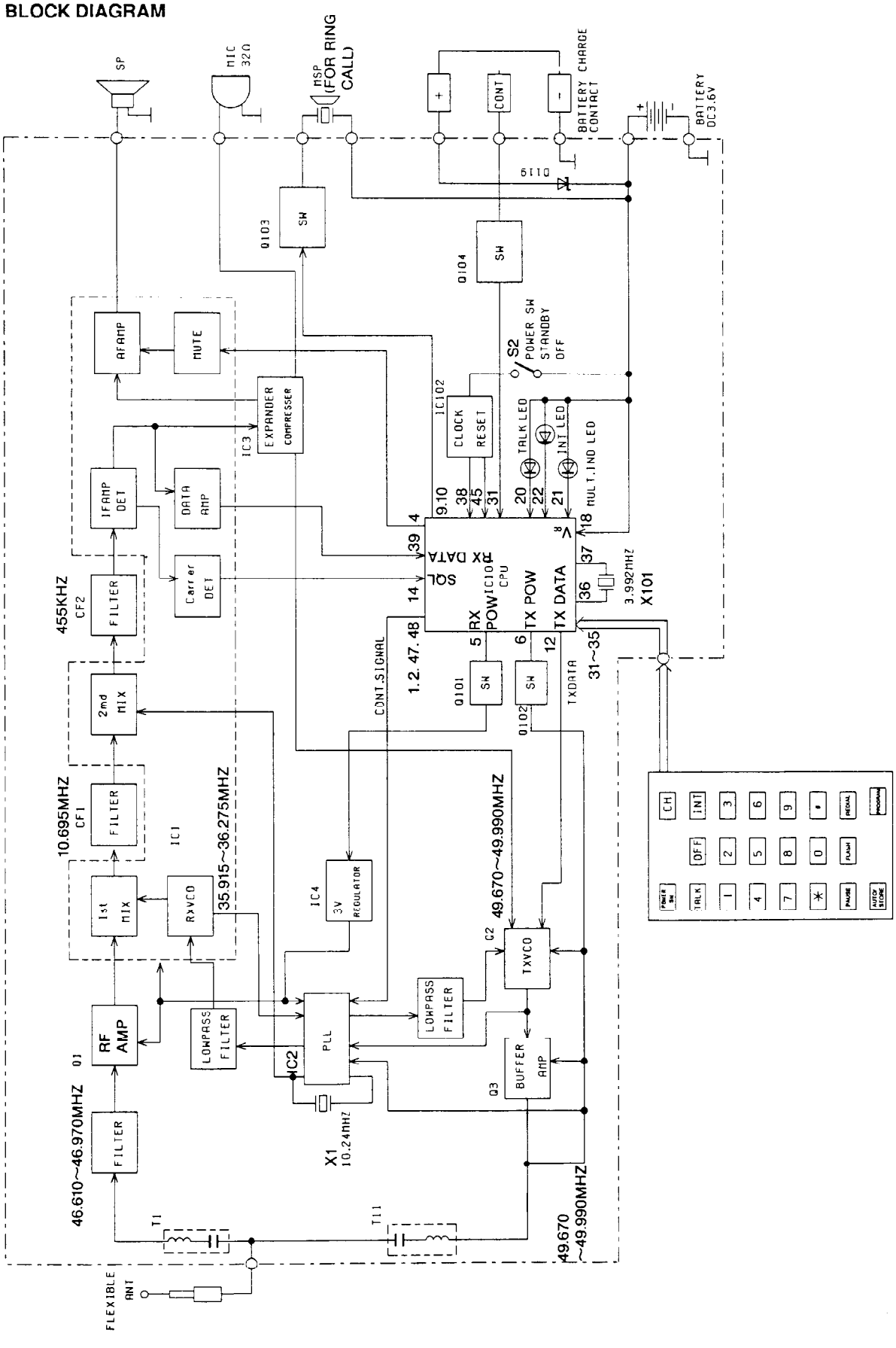
CIRCUIT EXPLANATION (KX-T3720H-1)

■ BLOCK DIAGRAM

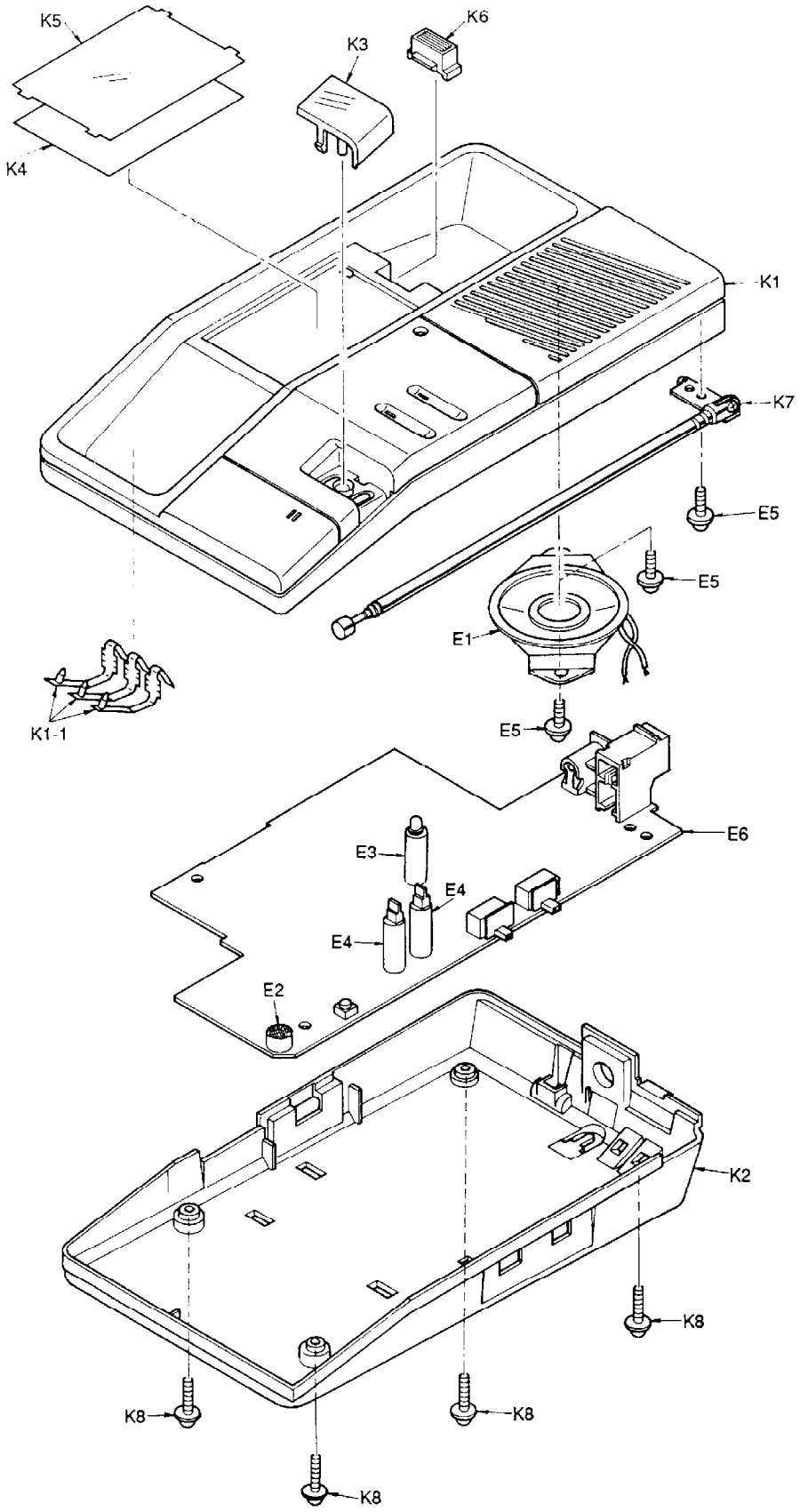


CIRCUIT EXPLANATION (KX-T3720R-1)

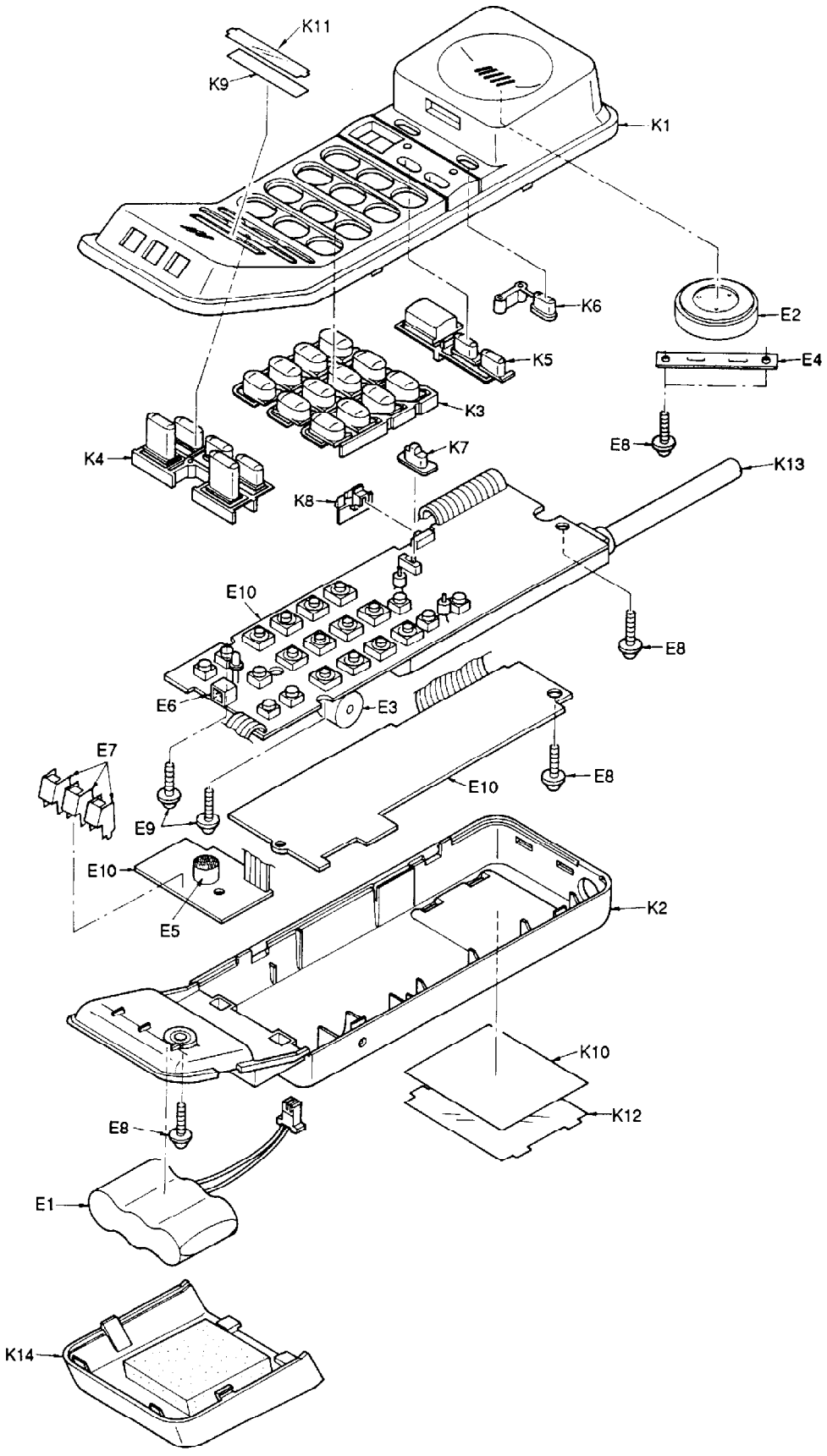
■ BLOCK DIAGRAM



CABINET AND ELECTRICAL PARTS LOCATION (KX-T3720H-1)



CABINET AND ELECTRICAL PARTS LOCATION (KX-T3720R-1)



REPLACEMENT PARTS LIST

Model KX-T3720H-1

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety. When replacing any of these components, use only manufacture's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) k=1000Ω,M=1000kΩ
   All capacitors are in MICRO FARADS(μF) P=μμF
   *Type &Wattage of Resistor
   Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor
Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyster
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polyproplylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
		INTEGRATED CIRCUITS, TRNSISTORS & DIODES	
IC1	AN6169K	IC	1
IC2	PQVILC7151	IC	1
IC3	AN6165SB	IC	1
IC4	MN158413KPJ1	IC	1
IC201	PQVIMC34119M	IC	1
Q1	2SK544	TRANSISTOR(SI)	1
Q6	UN5213	TRANSISTOR(SI)	1
Q7	2SD1994A	TRANSISTOR(SI)	1
Q8,11,201	2SB1218A	TRANSISTOR(SI)	3
Q9,10,202 ,25,28	2SD1819A	TRANSISTOR(SI)	5
Q15,16	2SC2412K	TRANSISTOR(SI)	2
Q24	2SD1991A	TRANSISTOR(SI)	1
Q32	2SA1625	TRANSISTOR(SI) ⚠	1
D1	MA4056	DIODE(SI)	1
D2,3	PQVD1SV145	DIODE(SI)	2
D4	MA4100	DIODE(SI)	1
D5	MA4082	DIODE(SI)	1
D6	PQVDHZS6B3		1
D7,8,10 ,18,24-31 ,35,37-39 ,41	1SS119	DIODE(SI)	17
D9	MA4110	DIODE(SI)	1
D11	LN224RP	LED	1
D12	LN28RPL	LED	1
D14	PQVDS1ZB40F1	DIODE(SI) ⚠	1
D32	LN324GP	LED	1

Ref. No.	Part No.	Part Name & Description	Pcs
		CRYSTALS	
X1	PQVCJ10240C5	CRYSTAL OSCILLATOR, 10.240MHz	1
X2	PQVCJ3581N9Z	CRYSTAL OSCILLATOR, 3.581MHz	1
		COILS AND TRANSFORMERS	
L1	PQLQZK1R8M	COIL	1
L2	PQLQZI154J	COIL	1
L5	ELEPK330KA	COIL	1
L6	PQLQZMR56K	COIL	1
T1	PQLA7N2	COIL	1
T2	EIL7EL002P	COIL	1
T3	EIL7EL001P	COIL	1
T4	PQLA7A7	COIL	1
T5	PQLI2B201	I.F. TRANSFORMER	1
T6	PQLA7A20	COIL	1
T7	PQLA7N1	COIL	1
T8	PQLA7A9	COIL	1
T9	PQLA7A11	COIL	1
T10	PQLT8F3A	TRANSFORMER ⚠	1
		SWITCHS	
S4	EVQ12405K	SWITCH, PAGE / INTERCOM	1
S5,7	PQSS2A27W	SWITCH, DIALING MODE SELECTOR , CODE SELECTOR	2
		OTHERS	
CF1	RVFSFE107MSR	CERAMIC FILTER	1
CF2	PQVFCFW455E	CERAMIC FILTER	1
CN1	PQJJ2HA2Z	JACK, TEL / DC IN ⚠	1
PC1	PQVIPC814K	PHOTO ELECTRIC TRANSDUCER ⚠	1
PC3	PQVITLP627	PHOTO ELECTRIC TRANSDUCER ⚠	1
F1	PQBA1Y02NMA	FUSE ⚠	1
VC1	PQCVTZ20F	TRIMMER CAPACITOR	1
ZNR1	PQVDHSA351F	SURGE ABSORBER ⚠	1
		CABINET PARTS	
K1	PQYMT3720HM	UPPER CABINET ASSY	1
K1-1	PQJT980X	METAL PARTS	3
K2	PQYF1048Q7	LOWER CABINET	1
K3	PQBC267Z	BUTTON	1
K4	PQHP5089X	PAPER PARTS	1
K5	PQHR5335Z	TRANSPARENT PLATE	1
K6	PQKE49Z	HANGER	1
K7	XEAPQK170BA	ROD ANTENNA	1
K8	XTW3+S14P	SCREW	4
		ELECTRICAL PARTS	
E1	PQAS5P05Y	SPEAKER	1
E2	RJM142Z	MICROPHONE	1
E3	PQHR494Z	SPACER	1
E4	PQHR495Z	SPACER	2
E5	XTW3+S10P	SCREW	3
E6	PQWPT3720HM1	P.C. BOARD ASSY (NLA)	1

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
RESISTORS					
R1	PQ4R10XJ332	3.3K	R70	ERDS2TJ104	100K
R4	ERJ3GEYJ103	10K	R71	ERJ3GEYJ223	22K
R5	PQ4R10XJ273	27K	R72	PQ4R10XJ104	100K
R6	PQ4R10XJ681	680	R73	ERJ3GEYJ104	100K
R7	ERJ3GEYJ103	10K	R74	ERJ3GEYJ104	100K
R8	ERJ3GEYJ473	47K	R75	ERJ3GEYJ104	100K
R10	PQ4R10XJ393	39K	R76	PQ4R10XJ103	10K
R11	PQ4R10XJ391	390	R77	PQ4R10XJ104	100K
R12	PQ4R10XJ223	22K	R78	ERJ3GEYJ102	1K
R13	PQ4R10XJ562	5.6K	R79	PQ4R10XJ102	1K
R14	ERDS2TJ121	120	R80	ERJ3GEYJ224	220K
R15	ERDS2TJ562	5.6K	R81	PQ4R10XJ332	3.3K
R16	PQ4R10XJ104	100K	R82	ERDS2TJ271	270
R17	PQ4R10XJ222	2.2K	R83	ERDS2TJ331	330
R18	PQ4R10XJ222	2.2K	R84	ERJ3GEYJ104	100K
R19	PQ4R10XJ103	10K	R85	ERDS2TJ103	10K
R20	ERJ3GEYJ103	10K	R86	ERJ3GEYJ331	330
R21	PQ4R10XJ683	68K	R87	ERDS2TJ222	2.2K
R22	PQ4R10XJ683	68K	R91	ERDS2TJ154	150K
R23	ERJ3GEYJ334	330K	R92	ERJ3GEYJ103	10K
R24	PQ4R10XJ473	47K	R93	ERJ3GEYJ473	47K
R25	ERDS2TJ104	100K	R95	PQ4R10XJ104	100K
R26	PQ4R10XJ223	22K	R96	ERJ3GEYJ104	100K
R27	PQ4R10XJ122	1.2K	R97	ERJ3GEYJ104	100K
R29	ERJ3GEYJ103	10K	R98	ERJ3GEYJ104	100K
R30	PQ4R10XJ101	100	R99	ERDS2TJ473	47K ⚠
R31	PQ4R10XJ221	220	R100	ERDS2TJ820	82
R32	PQ4R10XJ473	47K	R101	ERDS2TJ473	47K
R33	ERDS2TJ103	10K	R137	ERJ3GEYJ681	680
R34	PQ4R10XJ472	4.7K	R141	ERJ3GEYJ562	5.6K
R35	ERJ3GEYJ103	10K	R142	PQ4R10XJ334	330K
R37	PQ4R10XJ473	47K	R144	PQ4R10XJ122	1.2K
R38	ERJ3GEYJ103	10K	R145	ERJ3GEYJ224	220K
R39	PQ4R10XJ224	220K	R146	ERJ3GEYJ101	100
R40	PQ4R10XJ224	220K	R147	ERDS2TJ103	10K
R41	PQ4R10XJ683	68K	R160	PQ4R10XJ683	68K
R42	PQ4R10XJ104	100K	R176	ERDS2TJ223	22K
R43	PQ4R10XJ682	6.8K	R188	PQ4R10XJ104	100K
R44	PQ4R10XJ184	180K	R189	ERDS2TJ124	120K
R45	PQ4R10XJ332	3.3K	R190	ERJ3GEYJ104	100K
R46	ERJ3GEYJ223	22K	R191	PQ4R10XJ472	4.7K
R47	ERJ3GEYJ681	680	R193	ERDS2TJ223	22K
R48	PQ4R10XJ333	33K	R194	ERJ3GEYJ823	82K
R49	ERJ3GEYJ333	33K	R195	PQ4R10XJ684	680K
R50	PQ4R10XJ333	33K	R197	PQ4R10XJ184	180K
R51	PQ4R10XJ103	10K	R199	ERJ3GEYJ103	10K
R52	PQ4R10XJ153	15K	R201	ERJ3GEYJ472	4.7K
R53	PQ4R10XJ153	15K	R202	ERJ3GEYJ473	47K
R54	ERJ3GEYJ153	15K	R203	ERJ3GEYJ473	47K
R55	ERJ3GEYJ563	56K	R205	PQ4R10XJ682	6.8K
R63	ERJ3GEYJ104	100K	R206	PQ4R10XJ274	270K
R64	PQ4R10XJ224	220K	R207	ERJ3GEYJ103	10K
R65	ERJ3GEYJ103	10K	R208	ERDS2TJ473	47K
R66	ERJ3GEYJ681	680	R209	PQ4R10XJ102	1K
R67	PQ4R10XJ221	220	R210	ERJ3GEYJ104	100K
R68	PQ4R10XJ470	47	R210	PQ4R10XJ104	100K
R69	PQ4R10XJ472	4.7K	R211	ERJ3GEYJ332	3.3K

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
CAPACITORS					
C3	PQCUV1H050DC	5P	C59	ECUV1H152KBV	0.0015
C4	PQCUV1H223KB	0.022	C60	PQCUV1H121JC	120P
C5	PQCUV1H223KB	0.022	C61	PQCUV1H103KB	0.01
C6	PQCUV1H102J	0.001	C62	ECEA1CKS100	10
C7	PQCUV1H102J	0.001	C63	PQCUV1H223KB	0.022
C8	PQCUV1E104MD	0.1	C64	ECEA1VKS4R7	4.7
C9	PQCUV1E104MD	0.1	C65	PQCUV1H223KB	0.022
C10	PQCUV1E104MD	0.1	C66	PQCUV1H221JC	220P
C11	ECEA1HKS0R1	0.1	C67	ECUV1H392KBV	0.0039
C12	ECEA1HKS010	1	C68	PQCUV1E104MD	0.1
C13	ECEA1HKS4R7	4.7	C73	ECUV1H332KBV	0.0033
C14	PQCUV1E473MD	0.047	C75	PQCUV1H103KB	0.01
C15	PQCUV1H100DC	10P	C76	ECEA1CKS100	10
C16	ECUV1H030CCV	3P	C77	ECEA0JU102	1000
C17	ECUV1H150JCV	15P	C78	PQCUV1H105JC	1
C18	PQCUV1H103KB	0.01	C79	ECEA0JU102	1000
C21	ECEA1HKS3R3	3.3	C80	ECEA1CKS100	10
C22	PQCUV1H103KB	0.01	C81	ECEA1AKA221	220
C23	PQCUV1H103KB	0.01	C82	ECEA1CK101	100
C24	PQCUV1H103KB	0.01	C83	PQCUV1H103KB	0.01
C25	PQCUV1E473MD	0.047	C84	PQCUV1H103KB	0.01
C26	ECEA1VKS4R7	4.7	C85	PQCUV1H220JC	22P
C27	PQCUV1E473MD	0.047	C86	PQCUV1H220JC	22P
C28	PQCUV1H102J	0.001	C87	ECQE2224KF	0.22 ⚠
C29	PQCUV1H681JC	680P	C88	ECKD2H681KB	680P ⚠
C30	PQCUV1H030CC	3P	C89	ECKD2H681KB	680P ⚠
C31	PQCUV1H680JC	68P			
C32	PQCUV1H220JC	22P	C122	ECUV1H104MD	0.1
C33	PQCUV1H330JC	33P	C123	ECUV1H104MD	0.1
C34	PQCUV1H101JC	100P	C124	PQCUV1H101JC	100P
C35	PQCUV1H101JC	100P	C126	ECUV1H104ZFV	0.1
C37	PQCUV1H150JC	15P	C127	ECFD1C104KD	0.1
C38	PQCUV1H180JC	18P	C131	ECFD1E223KD	0.022
C39	PQCUV1H103KB	0.01	C132	ECUV1H473MDV	0.047
C40	PQCUV1H103KB	0.01	C143	ECEA1AU221	220
C41	ECEA1HKS010	1	C170	PQCUV1E104MD	0.1
C42	PQCUV1H103KB	0.01	C171	ECUV1H103KBV	0.01
C43	PQCUV1E104MD	0.1	C172	ECUV1H473MDV	0.047
C44	PQCUV1E104MD	0.1	C173	ECUV1H102KBV	0.001
C45	PQCUV1H470JC	47P	C175	ECUV1H104ZFV	0.1
C46	ECUV1H103KBV	0.01	C178	ECUV1H103KBV	0.01
C49	PQCUV1H223KB	0.022	C201	ECEA1CKS470	47
C50	ECEA1CKS220	22	C202	ECEA1HKS4R7	4.7
C52	PQCUV1E473MD	0.047	C203	PQCUV1E104MD	0.1
C53	PQCUV1E473MD	0.047	C204	PQCUV1H471JC	470P
C55	PQCUV1E104MD	0.1	C205	PQCUV1E104MD	0.1
C56	ECEA1HKS4R7	4.7	C206	ECUV1H104ZFV	0.1
C57	ECEA1CKS100	10	C207	PQCUV1E104MD	0.1
C58	ECEA1CKS100	10	C208	PQCUV1H105JC	1

REPLACEMENT PARTS LIST

Model KX-T3720R-1

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety.
   When replacing any of these components, use only manufacture's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) k=1000Ω,M=1000kΩ
   All capacitors are in MICRO FARADS(μF) P=μμF
   *Type &Wattage of Resistor
   Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor
Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyster
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
		INTEGRATED CIRCUITS, TRNSISTORS & DIODES	
IC1	AN6168SC	IC	1
IC2	PQVI371004FT	IC	1
IC3	AN6165K	IC	1
IC4	PQVIN7201U30	IC	1
IC101	PQVI505L1236	IC	1
IC102	PQVITC4069UBF	IC	1
Q1	2SK543	TRANSISTOR(SI)	1
Q2,3	2SC2295	TRANSISTOR(SI)	2
Q101,102	2SB1218A	TRANSISTOR(SI)	2
Q103	2SB709A	TRANSISTOR(SI)	1
Q104	2SD601R	TRANSISTOR(SI)	1
Q105	PQVTDTC144TK	TRANSISTOR(SI)	1
Q106	PQVTDTC144K	TRANSISTOR(SI)	1
D2	PQVD1SV145	DIODE(SI)	1
D101,102 ,108,109 .111,113 ,117,118 ,120	1SS131	DIODE(SI)	9
D104	MA700A	DIODE(SI)	1
D105,107	PQVDSLZ244A1	LED	2
D106	PQVDSLZ135B2	LED	1
D115	MA4036	DIODE(SI)	1
D119	MA4068	DIODE(SI)	1

Ref. No.	Part No.	Part Name & Description	Pcs
		CRYSTALS	
X1	PQVCJ10240C5	CRYSTAL OSCILLATOR, 10.240MHz	1
X101	PQVCJ3992N9Z	CRYSTAL OSCILLATOR, 3.992MHz	1
		VARIABLE RESISTORS	
VR1	EVNDXAA03B35	VARIABLE RESISTOR, 300kΩ (B)	1
VR101	EVNDXAA03B25	VARIABLE RESISTOR, 200kΩ (B)	1
		COILS. CRYSTALS	
L4	PQLQZMR27M	COIL	1
L101	PQLQZM100K	COIL	1
T1,11	PQLA7N1	COIL	2
T2	EIL7EL003P	COIL	1
T3	EIL7EL004P	COIL	1
T4	EIL7EL005P	COIL	1
T5	PQLA7A9	COIL	1
T6	EIC7EL003A	COIL	1
T7	PQLI2B201	I.F. TRANSFORMER	1
T8	PQLA7A10	COIL	1
T9	PQLA7A7	COIL	1
		SWITCHS	
S1	ESD11H120	SWITCH, VOLUME SELECTOR	1
S2	ESD11V120	SWITCH, POWER / RINGER	1
S101-113	PQSH1A43Z	SWITCH, 12KEY, TALK	13
S121-128	EVQ12405K	SWITCH, PROGRAM, AUTO / STORE , FLASH, PAUSE, REDIAL, INT' / PAGE, OFF, CHANNEL	8
		OTHERS	
CF1	RVFSFE107MSR	CERAMIC FILTER	1
CF2	PQVFCFW455E	CERAMIC FILTER	1
TC1	PQCVTZ20F	TRIMMER CAPACITOR	1
		CABINET PARTS	
K1	PQKM189S7	FRONT CABINET ASS'Y	1
K2	PQKF171Z8	CABINET PLATE	1
K3	PQBCX173Z	BUTTON	1
K4	PQBCX174Z	BUTTON	1
K5	PQBCX175Z	BUTTON	1
K6	PQBC252Z	BUTTON	1
K7	PQBD148Z	KNOB	1
K8	PQBD149Z	KNOB	1
K9	PQHP5065Z	PAPER PARTS	1
K10	PQHP5066V	PAPER PARTS	1
K11	PQHR5290Z	PLASTIC PARTS	1
K12	PQHR5291Z	TRANSPARENT PLATE	1
K13	PQSA807Z	ANTENNA	1
K14	PQKK55W8	LID	1
		ELECTRICAL PARTS	
E1	KX-A36A	RECHARGEABLE BATTERY	1
E2	PQAX3P07Z	SPEAKER	1
E3	PQEFBQMB111M	BUZZER	1
E4	PQUL58Y	METAL PARTS	1
E5	PQJM124Z	MICROPHONE	1
E6	PQJP2D59Z	CONNECTOR (CN101)	1
E7	PQJT3119X	METAL PARTS	3
E8	XTW26+10E	SCREW	5
E9	XTW26+8F	SCREW	2
E10	PQWPT3720RM1	P.C. BOARD ASS'Y (NLA)	1

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Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
RESISTORS					
R2	PQ4R10XJ331	330	R45	PQ4R10XJ182	1.8K
R3	PQ4R10XJ470	47	R46	PQ4R10XJ104	100K
R4	PQ4R10XJ822	8.2K	R47	PQ4R10XJ223	22K
R5	PQ4R10XJ152	1.5K	R49	PQ4R10XJ223	22K
R6	PQ4R10XJ333	33K	R50	PQ4R10XJ102	1K
R7	ERDS2TJ152	1.5K	R51	PQ4R10XJ331	330
R8	PQ4R10XJ333	33K	R52	PQ4R10XJ333	33K
R9	PQ4R10XJ102	1K	R57	PQ4R10XJ223	22K
R13	PQ4R10XJ103	10K			
R14	PQ4R10XJ223	22K	R101	PQ4R10XJ223	22K
R15	ERJ3GEYJ102	1K	R102	ERDS2TJ562	5.6K
R16	PQ4R10XJ104	100K	R103	ERDS2TJ562	5.6K
R17	ERJ3GEYJ273	27K	R105	ERDS2TJ153	15K
R18	ERJ3GEYJ393	39K	R106	ERDS2TJ821	820
R19	ERDS2TJ154	150K	R107	ERDS2TJ220	22
R21	ERJ3GEYJ334	330K	R108	ERJ3GEYJ681	680
R22	ERJ3GEYJ103	10K	R109	PQ4R10XJ152	1.5K
R23	ERJ3GEYJ183	18K	R110	PQ4R10XJ681	680
R24	ERJ3GEYJ473	47K	R115	ERDS2TJ332	3.3K
R26	ERJ3GEYJ223	22K	R116	PQ4R10XJ220	22
R27	ERJ3GEYJ222	2.2K	R117	ERDS2TJ473	47K
R29	ERJ3GEYJ823	82K	R118	ERJ3GEYJ392	3.9K
R30	ERJ3GEYJ104	100K	R122	ERJ3GEYJ105	1M
R33	ERJ3GEYJ152	1.5K	R123	ERJ3GEYJ104	100K
R34	ERJ3GEYJ822	8.2K	R124	ERJ3GEYJ473	47K
R36	ERJ3GEYJ333	33K	R125	ERJ3GEYJ185	1.8M
R37	ERJ3GEYJ333	33K	R126	ERJ3GEYJ103	10K
R38	ERJ3GEYJ153	15K	R127	ERDS2TJ104	100K
R39	ERJ3GEYJ153	15K	R128	ERDS2TJ104	100K
R40	ERJ3GEYJ103	10K	R129	ERDS2TJ104	100K
R41	ERJ3GEYJ563	56K	R130	ERDS2TJ104	100K
R42	PQ4R10XJ184	180K	R131	ERDS2TJ104	100K
R43	ERDS2TJ154	150K	R132	ERDS2TJ104	100K

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
CAPACITORS					
C1	PQCUV1H040C	4P	C41	ECUV1H332KBV	0.0033
C2	PQCUV1H103KB	0.01	C42	ECUV1H104ZFV	0.1
C3	PQCUV1H103KB	0.01	C43	ECUV1H104ZFV	0.1
C5	PQCUV1H223KB	0.022	C44	PQCUV1E104MD	0.1
C6	PQCUV1E104MD	0.1	C46	PQCUV1H103KB	0.01
C7	PQCUV1E104MD	0.1	C48	ECUV1H180JCV	18P
C9	PQCUV1H150JC	15P	C49	PQCUV1H150JC	15P
C10	PQCUV1H030CC	3P	C50	PQCUV1H223KB	0.022
C11	PQCUV1H120JC	12P	C51	PQCUV1H330JC	33P
C12	ECUV1H103KBV	0.01	C52	PQCUV1H680JC	6
C13	ECEA0JKS470	47	C53	PQCUV1H470JC	47P
C14	ECUV1H103KBV	0.01	C54	PQCUV1H330JC	33P
C15	PQCUV1H472KB	0.0047	C55	PQCUV1H103KB	0.01
C16	PQCUV1H103KB	0.01	C61	PQCUV1H070DC	7P
C17	PQCUV1E473MD	0.047	C62	ECUV1H471JCV	470P
C18	ECUV1H103KBV	0.01	C64	PQCUV1H103KB	0.01
C19	ECUV1H103KBV	0.01	C66	PQCUV1H101JC	100P
C20	ECUV1H103KBV	0.01	C68	PQCUV1H390JC	39P
C21	ECUV1H104ZFV	0.1			
C22	ECUV1H104ZFV	0.1	C101	ECUV1H103KBV	0.01
C23	ECUV1H102KBV	0.001	C102	ECEA0GKS221	220
C25	ECUV1H223KBV	0.022	C104	ECUV1H330JCV	33P
C26	ECEA0GKS101	100	C105	ECUV1H330JCV	33P
C31	ECUV1H104ZFV	0.1	C106	PQCUV1H103KB	0.01
C32	ECEA1VKS4R7	4.7	C109	ECQV1H474JZ	0.47
C33	ECEA1CKS100	10	C110	ECEA0JKS220	22
C34	ECUV1H471JCV	470P	C111	ECUV1H104ZFV	0.1
C35	ECEA0JKS220	22	C112	ECUV1H104ZFV	0.1
C36	ECUV1H332KBV	0.0033	C113	PQCUV1H103KB	0.01
C37	ECEA1CKS100	10	C114	ECUV1H104ZFV	0.1
C38	ECEA1VKS4R7	4.7	C115	PQCUV1H103KB	0.01
C39	ECUV1H223KBV	0.022	C116	PQCUV1H102J	0.001
C40	ECUV1H331JCV	330P	C117	PQCUV1H103KB	0.01

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Ref. No.	Part No.	Part Name & Description	Pcs
ACCESSORIES			
A1	KX-A10	AC ADAPTOR ⚠	1
A2	PQJA59V	TELEPHONE CORD	1
A3	PQPL24Z7	WALL MOUNT BRACKET	1
A4	PQQX61B2Z	INSTRUCTION BOOK	1
PACKING MATERIALS			
P1	PQPP94W	PROTECTION COVER	1
P2	XZB20X35A01	PROTECTION COVER	1
P3	PQPN1109Z	PAD	1
P4	PQPN1110Z	ACCESSORY BOX	1
P5	PQPK1051Y	GIFT BOX	1